

Dr. Edward Baker, P.Geo

Geochemist - Data Scientist, Knight Piésold - Vancouver, BC

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Currently a geochemist working for Knight Piésold in Vancouver. Significant experience with a variety of programming languages and analytical techniques. Looking forward to using geoscience to solve problems that matter.

Key Skills

Geology, Petrology, Python, Fluid geochemistry, GOLDSIM, PHREEQC, Perplex, Proposal and report writing, Thermodynamic modelling, Kotlin, Julia, SQL, Presenting data/Conferences, Remote-sensing/GIS, TensorFlow/Keras, Git, Docker.

Recent Projects

Josemaria Project (ARG)	Water quality modelling, Baseline studies/analysis and reporting, GOLDSIM modelling
Gosselin Mine (CA)	Geochemical acid rock drainage/metal leaching characterisation, Geochemical change modelling for comparison with Côté deposit
Environmental Dashboard (Online)	Designed and wrote code for an environmental analysis dashboard, used by the client to demonstrate environmental compliance to stakeholders, SkLearn and PHREEQC used for live analysis within the dashboard
Hydro Power Model (CA)	Python numerical model for power generation, used to optimise turbine design/choice and determine likely power availability

Employment History

Geochemist – Knight Piésold, Vancouver, BC 2023 – Present	Automating data processing and publication; Writing applications and reporting for regulatory filings; Geochemical modelling and analysis – PHREEQC / ASE; <i>ab initio</i> modelling for estimation of crystallographic parameters; Coded and deployed environmental data dashboard using Docker
Postdoctoral Fellow – University of Manchester, UK 2021 – 2023	Main project combined experimental geochemistry with numerical modelling, looking at light element behaviour in reducing conditions; Developed and funded independent research which included collaborations with national laboratories and mining companies; Coded Android mobile app to automate calculations required for laboratory work; Trained and mentored research students; Significant experience with a wide range of analytical methods, including mass spectrometry and e-beam techniques; Calibrated new redox proxy for reducing environments using XANES; Machine learning specialisation (Coursera)
PhD Candidate - University of Oxford, UK 2016 - 2021	Main project used high-pressure experiments to describe lunar formation and constrain bulk composition; Research scholarship, Planetary Materials Institute, Japan Co-Founded Oxford Society of Economic Geology – Organised and Led field trip to Sweden

Education

University of Oxford 2016 - 2021	PhD, Earth Science – Thesis Title: ‘On the Evolution of the Lunar Magma Ocean’
University of Oxford 2012 - 2016	Undergraduate Masters – MSci Earth Science - 2:1

Courses and Conferences

Exploration Tech, Vancouver 2024; BC ML/ARD conference, Vancouver 2023, 2024, 2025; iCARD, Halifax 2024; AME Roundup, Vancouver 2024; British planetary science conference, Oxford; Terrestrial planets conference, Cambridge